## Claims

What is claimed is:

1. A spin-stand positioning system for positioning a transducer head at a desired position relative to a data storage disc rotating on a spindle subsystem, the positioning system comprising:

a rotary micropositioning stage comprising a rotary actuator arm having an axis of rotation and supporting the transducer head relative to the data storage disc, a voice coil motor connected to the rotary actuator arm for positioning the rotary actuator arm in response to control current, and an encoder measuring an angular position of the rotary actuator arm;

a coarse positioning stage supporting the rotary micropositioning stage operable to position the transducer head at the desired position relative to the data storage disc, and

a position control subsystem connected to supply control current to the voice coil motor, wherein control current is conditional on the angular position measured by the encoder, to maintain the transducer head at the desired position relative to the data storage disc as the data storage disc rotates.

2. The spin-stand positioning system of claim 1 wherein the voice coil motor is a Halbach array voice coil motor.

3 The spin-stand positioning system of claim 1 wherein the rotary micropositioning stage further comprises:

a preamp board operably attached to the rotary actuator arm to amplify read signals received from the transducer head;

a mounting tool extending from the rotary actuator arm to support the transducer head on an head gimbal assembly relative to the data storage disc; and

an encoder plate attached to the rotary actuator arm and being operably coupled to the encoder to determine the angular position of the rotary actuator arm.

4. The spin-stand positioning system of claim 3 wherein the rotary actuator arm further comprises:

a wing attached to the rotary actuator arm to balance the wing, the encoder plate, the head gimbal assembly, the mounting tool, the preamp, and the rotary actuator arm about the axis of the rotary actuator arm.

5. The spin-stand positioning system of claim 1 further comprising:

a demodulator connected to the preamplifier to generate from servo data read from the data storage disc a track identifier specifying an identified track on the data storage disc and a position error signal characterizing an offset of the transducer head relative to the identified track.

6. The spin-stand positioning system of claim 5 wherein the position control subsystem further comprises:

a processor adjusting control current to the voice coil motor in accordance with the position error signal, if the position error signal and track identifier are consistent with the angular position measured by the encoder.

7. The spin-stand positioning system of claim 5 wherein the position control subsystem further comprises:

a processor bypassing adjustment of control current to the voice coil motor in accordance with the position error signal, if the position error signal and track identifier are not consistent with the angular position measured by the encoder.

8. The spin-stand positioning system of claim 5 wherein the position control subsystem further comprises:

a processor adjusting control current to the voice coil motor in accordance with the angular position measured by the encoder, if the position error signal and track identifier does not agree with the angular position.

9. The spin-stand positioning system of claim 1 wherein the position control subsystem further comprises:

a processor evaluating the position error signal, track identifier, and angular position measured by the encoder to generate a position error signal adjustment parameter to redefine the track as substantially circular on the data storage disc.

10. The spin-stand positioning system of claim 1 wherein the position control subsystem further comprises:

a processor translating the angular position measured by the encoder to a radial position of the transducer head relative to the data storage disc.

11. A method of positioning a transducer head at a desired position relative to a data storage disc rotating on a spindle subsystem, the transducer head being supported relative to the data storage disc by a rotary actuator arm, a voice coil motor rotating the rotary actuator arm, the method comprising:

receiving position data specifying the desired position on the data storage disc;

detecting an angular position of the rotary actuator arm;

evaluating the detected angular position against the position data; and

adjusting control current applied to the voice coil motor to rotate the rotary actuator arm, based on the detected angular position of the rotary actuator arm, to position the transducer head at the desired position relative to the data storage disc as the data storage disc rotates.

12. The method of claim 11 wherein the receiving operation comprises:

receiving an input position command specifying the desired position of the transducer head relative to the data storage disc.

13 The method of claim 12 wherein the evaluating operation comprises:

comparing the detected angular position against the input position command to determine a difference between the desired position of the transducer head relative to the data storage disc and a current position of the transducer head relative to the data storage disc.

14. The method of claim 11 wherein the receiving operation comprises:

determining servo data from the data storage disc specifying the desired position of the transducer head compared to a current position of the transducer head relative to the data storage disc.

15. The method of claim 14 wherein the evaluating operation comprises:

comparing the detected angular position with the servo data to determine a difference between the desired position of the transducer head relative to the data storage disc and the current position of the transducer head relative to the data storage disc.

16. The method of claim 1 wherein the rotary actuator arm has an axis and further comprising:

balancing the rotary actuator arm and attached components about the axis of the rotary actuator arm.

17. The method of claim 1 further comprising:

detecting servo data from the data storage disc; and

evaluating the servo data and detected angular position to generate a position error signal adjustment parameter, thereby redefining the track as more circular on the data storage disc.

18. The method of claim 1 further comprising:

detecting servo data from the data storage disc; and

bypassing adjustment of control current to the voice coil motor in accordance with the position error signal, if the servo data is not consistent with the angular position measured by the encoder.

19. The method of claim 1 further comprising:

detecting servo data from the data storage disc; and

adjusting control current to the voice coil motor in accordance with the detected angular position, if the servo data is not consistent with the detected angular position.

20. A spin-stand comprising:

a spindle subsystem for rotating a data storage disc having a radial track position; and

means for positioning a head relative to the radial track position on the data storage disc.

21. The spin-stand of claim 20 wherein the means for positioning comprises:

means for detecting angular position of a rotary actuator arm.

22. The spin-stand of claim 20 wherein the means for positioning comprises:

means for detecting servo data from the data storage disc.

23. The spin-stand of claim 20 wherein the means for positioning comprises:

a rotary positioning stage having a rotary actuator arm.

24. The spin-stand of claim 20 wherein the means for positioning comprises:

a Halbach array voice coil motor.

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